

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
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INTERNATIONAL APPLICATION NO.

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PRIORITY DATE CLAIMED

August 4, 1998

TITLE OF INVENTION

Information Processing Apparatus

APPLICANT(S) FOR DO/EO/US

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Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☐ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☒ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
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 - c. ☐ have not been made; however, the time limit for making such amendemnts has NOT expired.
 - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☐ A **FIRST** preliminary amendment.
☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:
 - 1.) Verification of Translation
 - 2.) Formal Drawings
 - 3.) Signed Declaration/Power of Attorney
 - 4.) Signed Assignment
 - 5.) International Search Report
 - 6.) References Cited in the International Search Report
 - 7.) Form PCT/IB/301,304,308
 - 8.) Copy of PCT Request (PCT-Easy)
 - 9.) Copy of Front Page of Published PCT Application

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DESCRIPTION

Information Processing Apparatus

Technical Field

This invention relates to an information processing apparatus adapted for receiving Electronic Program Guide (EPG) information by a pocket bell receiver to process such information, and a processing method therefor.

Background Art

Digital television broadcasts have been carried out by using satellite. Since such broadcasts are carried out by using digital signals, it is possible to ensure a large number of channels such as 100 channels. In view of the above, in order to have ability to select a desired channel from transmitted large number of channels, it is proposed to carry out transmission of electronic program guide information along with program information. User can display such electronic program guide on display to select the desired program while looking at that display.

In the case of transmitting electronic program guide information as described above to receivers installed or provided at respective homes, large scale units are required as the unit of the transmitting side. In addition, in the case of transmitting electronic program guide information by using network such as internet, etc., the

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Disclosure of the Invention

An information processing apparatus according to this invention comprises a receiver for receiving data when inherent or specific calling number of an information processing apparatus is dialed by any other information processing apparatus so that the information processing apparatus is called, a memory for storing data received by this receiver, and a display control unit for controlling display of picture prepared by data stored by this memory.

Moreover, an information processing apparatus according to this invention comprises calling means such as personal computer for calling any other information processing apparatus having inherent or specific calling number by dialing the calling number, transmitter transmitting control means such as modem for transmitting data to any other information processing apparatus called by this

calling means.

In the information processing apparatus according to this invention, when inherent or specific calling number of an information processing apparatus is dialed by any other information processing apparatus so that the information processing apparatus is called, data is received and display of picture prepared by the received data is controlled.

Still further objects of this invention and more practical merits obtained by this invention will become more apparent from the description of the embodiments which will be given below.

Brief Description of the Drawings

FIG. 1 is a block diagram showing information processing system to which an information processing apparatus according to this invention is applied.

FIG. 2 is a block diagram showing internal structure of receiver constituting this invention.

FIG. 3 is a view for explaining data structure of EPG data.

FIG. 4 is a view showing a display example of picture displayed on monitor.

Best Mode for Carrying Out the Invention

An information processing system in which an information processing apparatus (unit) according to this invention is used comprises, as shown in FIG. 1, a

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data transmitting source 1 including a personal computer 10 for preparing Electronic Program Guide (EPG) data, and a modem 11 for transmitting EPG data that the personal computer 10 has prepared, and a repeater 3 for repeating or replaying EPG data transmitted through a telephone line 2 from the data transmitting source 1. The repeater 3 transmits EPG data transmitted from the transmitting source 1 to receivers 5-1 to 5-5 (hereinafter in the case where there is no necessity to individually discriminate between receivers 5-1 to 5-5, reference will be made merely as receiver 5) installed or provided in respective homes through an antenna 4.

The receivers 5-1 to 5-5 respectively include therewithin pocket bell receivers having specific or intrinsic calling numbers. The receivers 5-1, 5-2, 5-3, 5-4, 5-5 have the same calling number as inherent or specific calling number. In the case where the data transmitting source 1 dials that calling number, EPG data transmitted in a distributed manner from the data transmitting source 1 is received by all receivers of the receivers 5-1, 5-2, 5-3, 5-4, 5-5. Accordingly, even when the data transmitting source 1 has not plural telephone lines 2, it can transmit the same EPG data to plural receivers 5 at a time.

Moreover, since the data transmitting source 1 can select receiver 5 which receives EPG data by calling number, it can transmit, in a distributed manner, different EPG data to individual receivers 5.

The receiver 5 which receives EPG data transmitted from the transmitting

source 1 has a function of video tape recorder. The receiver 5 receives, through an antenna 21, program transmitted to transmit that data to a tuner 31. User selects a desired program by a remote controller 23. The selection result is emitted toward a remote controller light receiving section 37 of the receiver 5 by using, e.g., infrared rays, etc. The selection result incident to this light receiving section 37 is outputted to the tuner 31 through a microcomputer 36. The tuner 31 selects program on the basis of the inputted selection result to output the selected program to a reproducing/recording section 32. The reproducing/recording section 32 reproduces the inputted program to output it to a monitor 22 through a character generator 33. In addition, the reproducing/recording section 32 records program by designation (instruction) of user with respect to video cassette tape which is set therewithin and is not shown.

The receiver 5 includes a key input section 38 composed of plural operation keys. This key input section 38 is constituted so that operations similar to operations carried out with the remote controller 23 can be carried out.

The pocket bell receiver 34 accommodated within the receiver 5 receives EPG data transmitted through the repeater 3. The received EPG data is stored into a memory 35 provided at the receiver 5. The EPG data stored in this memory 35 is adapted so that in the case where user instructs display of EPG by the remote controller 23, such EPG data is read out from the memory 35 by control of the microcomputer 36 and is outputted to the character generator 33. The character

generator 33 prepares EPG on the basis of inputted EPG data to output it to the monitor 22.

Here, data structure of EPG data transmitted from the data transmitting source 1 will be described with reference to FIG. 3. This EPG data consists of data of 51 bytes in total of program starting year of 2 bytes, program starting month of 1 byte, program starting day of 1 byte, program starting time of 2 bytes, program end time of 2 bytes, title name of 40 bytes, program channel (CH) of 1 bytes, program genre of 1 byte and rating of 1 byte. As the program name, data up to 20 characters by 40 bytes can be transmitted. Accordingly, the number of bytes also changes by increase or decrease of the number of characters. At present, since the number of bytes which can be transmitted at a time to the pocket bell receiver 34 is set to 100 bytes, 89 bytes at the maximum is used.

The operation of respective units (sections) shown in FIGS. 1 and 2 in the case where transmission/reception of such EPG data is carried out will now be described.

Person (User) who transmits EPG data inputs respective information shown in FIG. 3 by using the personal computer PC 10 of the data transmitting source 1. The personal computer 10 prepares EPG data of the data structure shown in FIG. 3 on the basis of inputted information. Such EPG data are prepared every respective one programs. Further, user who transmits such data allows the personal computer 10 to dial calling No. that the receiver 5 which is desired to transmit prepared EPG

The EPG data transmitted to the repeater 3 is transmitted to designated receiver 5 through the antenna 4. The transmitted EPG data is received by the pocket bell receiver 34 of the receiver 5. The received EPG data is stored into the memory 35. In this way, EPG data transmitted every respective one program are successively stored into the memory 35. Thus, EPG data of plural programs are stored.

The character generator 33 prepares EPG on the basis of inputted EPG data. The prepared EPG is outputted to the monitor 22 and is displayed thereon. FIG. 4 shows an example of display of EPG displayed on the monitor 22. Broadcasting date (year, month and day) is displayed at the upper portion of picture, and broadcasting channel names are displayed on the abscissor therebelow. Further,

User operates a predetermined key or keys of the remote controller 23, thereby making it possible to operate cursor 41. Thus, cursor 41 is moved onto the program name in which picture recording reservation is desired to be conducted to carry out a predetermined operation, thereby making it possible to carry out picture recording reservation of that program.

While display example shown in FIG. 4 is merely one example, program table (EPG) corresponding to one day may be displayed. Moreover, in the case where a portion of program table corresponding to one day is caused to be displayed as shown in FIG. 4, program table displayed is also caused to be slid in accordance with movement of cursor 41. By employing a configuration such that the program title is slid, it becomes possible to display program table corresponding

to one day.

As stated above, by employing pocket bell receiver 34, transmitting source of EPG data is not required to have plural telephone lines and it is possible to prepare EPG data by simple device such as personal computer, etc. to transmit it. Moreover, while data which can be transmitted to the pocket bell receiver 34 has upper limit of 100 bytes at present, transmitting processing operations are carried out plural times as described above, thereby making it possible to transmit large capacity of data.

As the case where the data transmitting source 1 carries out transmission of EPG data, there may be employed various transmitting forms, such as, for example, transmitting operation at a predetermined time every day or transmitting when there is request from user, etc.

While the structure that pocket bell receiver 34 is included within receiver 5 has been described in the above explanation, there may be employed a configuration such that pocket bell receiver 34 and receiver 5 are connected at the outside. Further, pocket bell receiver may be replaced by device having similar function in place of pocket bell receiver 34.

Further, as data to be transmitted, even data except for EPG data may be used in this invention. In addition, while it has been described that receiver 5 is video tape recorder, the receiver may be applied to device such as television image receiver or STB (Set Top Box), etc.

Industrial Applicability

In accordance with this invention, since when inherent or specific calling number of information processing apparatus is dialed by any other information processing apparatus so that the information processing apparatus is called, data is received to control display of picture prepared by the received data, it is possible to process EPG data also in information processing apparatus of simple structure.

Claims

1. An information processing apparatus comprising:
receiving means for receiving data when inherent or specific calling number of an information processing apparatus is dialed by any other information processing apparatus so that the information processing apparatus is called;
memory means for storing the data received by the receiving means; and
display control means for controlling display of picture prepared by the data stored by the memory means.
2. An information processing apparatus as set forth in claim 1,
wherein the receiving means is pocket bell receiver.
3. An information processing apparatus as set forth in claim 1,
wherein the data is Electronic Program Guide (EPG) information.
4. An information processing method comprising:
a receiving step of receiving data when intrinsic or specific calling number of an information processing apparatus is dialed by any other information processing apparatus so that the information processing apparatus is called;
a memory step of storing the data received at the receiving step; and
a step of controlling, by display control means, display of picture prepared by the data stored at the memory step.
5. An information providing medium for providing program which can be processed by computer which executes processing including:

a memory step of storing the data received at the receiving step; and

6. An information processing apparatus comprising:

transmitting means for transmitting data to the other information processing apparatus called by the calling means.

wherein the data is Electronic Program Guide (EPG) information and is prepared every one program.

a calling step of calling any other information processing apparatus having
intrinsic or specific calling number by dialing the calling number; and

9. An information providing medium for providing program which can be processed by computer which executes processing including:

a calling step of calling any other information processing apparatus having intrinsic or specific calling number by dialing the calling number; and

a transmitting step of transmitting data to the other information processing apparatus called at the calling step.

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ABSTRACT

An information processing apparatus comprises a pocket bell receiver for receiving data when intrinsic or specific calling number of an information processing apparatus is dialed by any other information processing apparatus so that the information processing apparatus is called, a memory for storing the data received by this pocket bell receiver, and a character generator for controlling display of picture prepared by the data stored by this memory. Data is received when intrinsic or specific calling number of the information processing apparatus is dialed by any other information processing apparatus so that the information processing apparatus is called, and display of picture prepared by received data is controlled.

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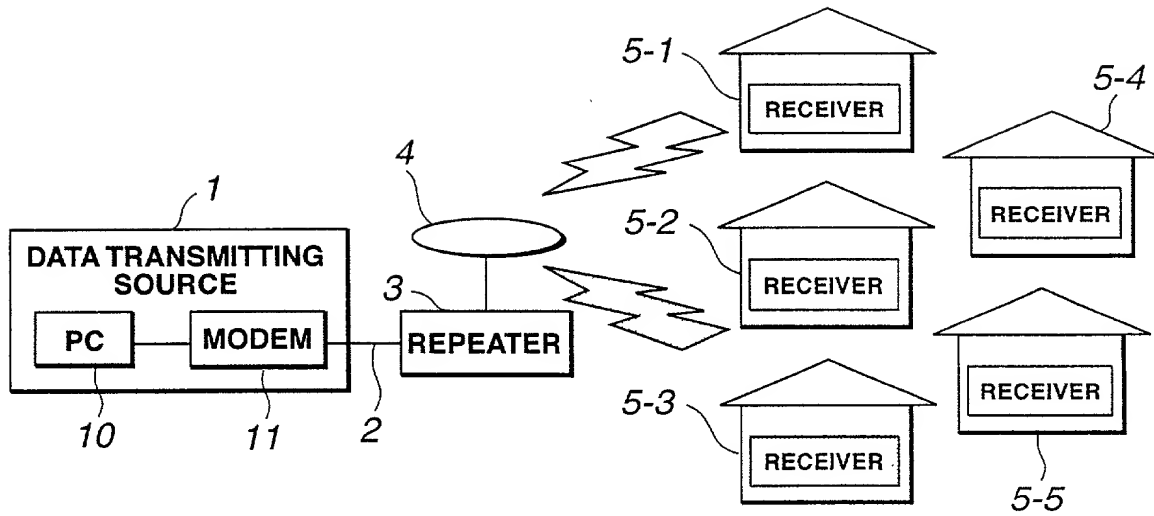


FIG. 1

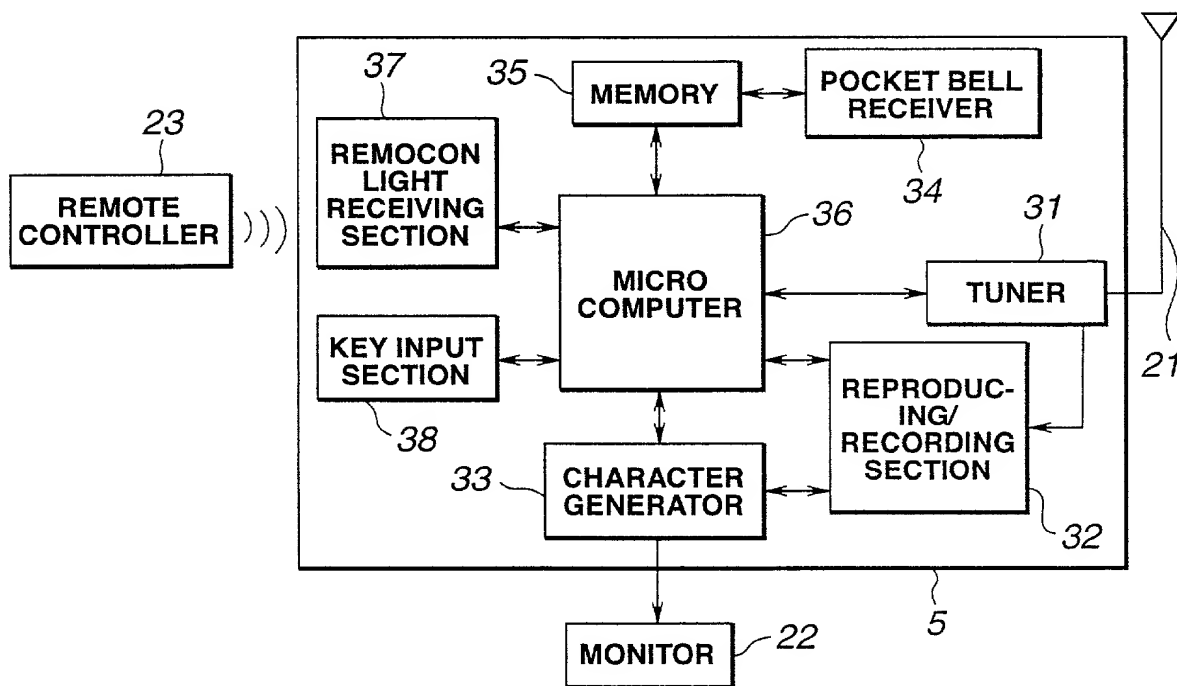


FIG. 2

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1998 (YEAR)	PROGRAM STARTING YEAR (2BYTE)
5 (MONTH)	PROGRAM STARTING MONTH (1BYTE)
30 (DAY)	PROGRAM STARTING DAY (1BYTE)
10 : 30	PROGRAM STARTING TIME (2BYTE)
13 : 30	PROGRAM END TIME (2BYTE)
"NOON" EVERYBODY VITALLY ENERGIEING TV	PROGRAM NAME (20CHARACTERS,40BYTE)
2 (CH)	PROGRAM CH (1BYTE)
12 (CODE)	PROGRAM GENRE (1BYTE)
PG-12	RATING (1BYTE)

ONE PROGRAM (51BYTE)

FIG.3

SELECTED
PROGRAM

MAY 30,1998				
	2CH	6CH	10CH	
10:00	FEEL GUIDE DISAGREEABLE	THE LAST OF G	LIFE VIVID	
10:30	"NOON" EVERYBODY VITALLY ENERGIEING TV	CHILDREN'S THEATER	SOUVENIR FULL UP	
11:00		VIGOROUS ADMINISTRATION	FAREWELL, G !	

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FIG.4

Attorney Docket: S99P1371US00
SK99PCT55US

DECLARATION AND POWER OF ATTORNEY

As a below-named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

INFORMATION PROCESSING APPARATUS

the specification of which

(check one)

 is attached hereto.

X was filed on August 4, 1999 (International Filing Date) as

International Application No. PCT/JP99/04220

corresponding to U.S. Serial No. _____

and was amended on _____ (if applicable) _____.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information of which I am aware which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

Priority Claimed

<u>Number</u>	<u>Country</u>	<u>Filing Date</u>	<u>Yes</u>	<u>No</u>
<u>P10-220025</u>	<u>Japan</u>	<u>August 4, 1998</u>	<u>X</u>	
<u>PCT/JP99/04220</u>	<u>WIPO</u>	<u>August 4, 1999</u>	<u>X</u>	

Declaration and Power of Attorney

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I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States Application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

<u>Application Serial No.</u>	<u>Filing Date</u>	<u>Status</u>
_____	_____	_____
_____	_____	_____

And I hereby appoint Jay H. Maioli, Reg. No. 27,213; Donald S. Dowden, Reg. No. 20,701; William E. Pelton, Reg. No. 25,702; Peter J. Phillips, Reg. No. 29,691; Ivan S. Kavrukov, Reg. No. 25,161; Christopher C. Dunham, Reg. No. 22,031; Norman H. Zivin, Reg. No. 25,385; John P. White, Reg. No. 28,678; and Robert D. Katz, Reg. No. 30,141; and each and all of them, all c/o Cooper & Dunham, 1185 Avenue of the Americas, New York, NY 10036 (Tel. (212) 278-0400), my attorneys, each with full power of substitution and revocation, to receive the patent, to transact all business in the Patent and Trademark Office connected therewith and to file any International Applications which are based thereon under the provisions of the Patent Cooperation Treaty.

Please address all communications, and direct all telephone calls, regarding this application to

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Reg. No. 27,213

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or
First joint inventor Yuji Murakami

Inventor's signature Yuji Murakami

Citizenship Japan Date of Signature ~~2000/3/9~~
March, 9, 2000

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